

# The Evolution and Growth of HR Analytics: ROI Based Approach

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## ABSTRACT

Human resources (HR) analytics has recently developed an enormous curiosity in most organizations still they find challenging to move from operational reporting to strategic reporting analytics. Organizations are becoming more data-focused by utilizing employee data to reach their strategic goals. Recent research studies have shown increased attention on HR analytics and its impact on business results. This paper is a conceptual study, with twofold objectives; firstly, to provide evidence of implementation and growth of HR analytics from the literature review; second, to study the impact of HR analytics-focused with Return on Investment. The purpose of applying HR analytics is to give better decisions on utilizing HR metrics and predictive models which optimizes performance and better return on investment. The study indicates that conceptual and empirical studies in HR analytics resulted in a greater return on investment when compared to case-based studies. Additionally, the study indicates that talent acquisition and learning and development are the main HR functions that generate the highest return on investment. This paper concludes that Choosing the right purpose and the right tool for the right moment of the intervention of HR analytics impact optimum organizational performance.

**KEYWORDS:** HR analytics, Return on Investment, HR metrics, HR Functions, Decision making, strategic reporting analytics

## I. INTRODUCTION

The extensive implementation of the internet has changed the game in the stream of Human resources (HR) and the rate of adoption for HR analytics is becoming wide, as data can be collected easily and shared. The recent trend in many organizations is to make data driven and evidence-based decisions (Holsapple, 2014). Nearly 71% of organizations use people analytics as a high priority to their organization's success (John Boudreau, 2017). For the HR department, it is the time of experiencing opportunities and challenges on HR transformation, which plays a crucial role in achieving competitive advantage (Kapoor B. &, 2014). Certain new technologies like Artificial Intelligence, Machine Learning, and Visualization tools are guiding organizations in the systematic adoption of HR analytics (HRA). Fitz, a human resources expert says that HR professionals need to learn to speak in terms of numbers, in qualitative and quantitative terms, storytelling or to express the activity in value-added terms (Fitz-Enz, 2014). Soundarajan, (2016) said, the focus of Human resources has moved away from basic measurement to the scorecard, engagement surveys to strategic planning.

For a long period, HR has been striving to become a strategic function in any organization either service or production-based, to get its place along with finance, marketing, sales, and operations functions (Bose, 2018). In a multidisciplinary approach, HR analytics plays a role in every aspect of HR functions like recruiting, training and development, employee engagement, compensation and benefits, succession planning to improve the quality of employee-

related decisions to improve individual and organizational performance (Handa, 2014). A trend in HR has started when HR-focused to be a strategic partner, then organizations identified in rapid development in technology that makes easy collection and interpretation of data and finally increased awareness of practicing evidence-based HR (Fitz-Enz, 2014). With rapid changes in information technology, traditional HR metrics seems to be not suitable to derive the right insights (Handa, 2014). The usage of data in HR used in interchangeable terms like HR analytics, talent analytics, people analytics, and workforce analytics. This paper used the term HR analytics since it is an emerging technique used in the field of HR. Many practitioners and researchers define HR analytics in various meaningful ways, here are a few of them which would be relevant to our study as Vihari says "it is the application of refined data mining and analytic techniques used in the field of HR" (Vihari, 2013), Kapoor (2012) said, "it is the processes to collect, transform and manage key HR-related data and documents; to analyze the gathered information using business analytics models; and to disseminate the analysis results to decision-makers for making intelligent decisions". Recently, Boudreau (2017) led an evidence-based review of HR analytics and defined it as "An HR practice enabled by information technology that uses descriptive, visual and statistical analyses of data related to HR processes, human capital, organizational performance, and external economic benchmarks to establish business impact and to enable data-driven decision-making" Marler and Ben-Gal (2019). A review of literature highlighted

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through the traditional benchmarking system it's quite challenging for organizations to give weighted results, whereas HR analytics is a reactive and evidence-based decision-making system that supports organizations for better results (Marler, 2017). In simple terms, it is an application of statistics using numerical data, modeling, and analyzing employee-related factors to improve Human Resources performance and business outcomes (King, 2016). It guides HR professionals to make data-driven decisions to attract, manage, and retain employees which improves Return on Investment and profitability (Fitz-Enz, 2014). The first goal of HR analytics is to collect and retain employee data for forecasting future results, second is to provide effective insights in managing employees to achieve organizational goals (Kapoor B. &, 2014) and third, HR Analytics can be utilized to examine the correlation between initiatives and strategic goals (Kapoor B. S., 2012). The current emphasis on HR Analytics is, it creates a better work environment and maximizes employee productivity (Lawler III, 2004). HR leaders align HR data and initiate the strategic goals of the organization. HR professionals can gather data from various sources like employee surveys, attendance records, demographic data, and employee work history, salary and promotion history, recruitment process, employee database, etc. (Bose, 2018).

## II. LITERATURE REVIEW

To understand the adoption, implication, and future impact of HR analytics on organization performance, authors have accessed information on literature reviews and studied using several books, journals (EBSCO, Emerald, Science Direct, ProQuest, research gate), websites related to management studies and commerce, social science, HR-related journals, white papers, and others. To get the relevant information, certain keywords like HR analytics, HR metrics, decision making in HRA were used.

Growth and Implementation benefits of HR analytics in an organization

Jack Fitz-end (1978) in his article "The Measurement Imperative" proposed the concept of measuring HR activities like staff retention, compensation, performance appraisal, competency development, etc. In the year 1990 comparing data with HR function became popular and that concept was called 'Benchmarking'. The idea of benchmarking was supporting organizations in providing insights and comparing business performance with others. Davenport et al. (2010) have published an article on Talent analytics in Harvard Business Review which opened the eyes of many organizations and researchers across the globe. However data collection, storage, and interpretation became challenging, but still, organizations believe that analytics will answers questions on what has happened? How? Why? What may happen in the future? This will also help to make evidence-based decisions. Bersin has shown in their study that only 10% of the Fortune 500 companies are using advanced analytics, out of which 6% of organizations are still using statistical techniques for HR analytics and 4% of companies using Predictive and prescriptive analytics

(Bersin, 2016). Consecutively, employees in the organization also need to have expertise in the use of advanced technologies and software. Many descriptive and empirical investigations have examined that, HR Professionals' analytical skills and abilities positively impact individual performance... Overall HR professionals must have the ability to analyze and translate results into understandable and actionable insights (Marler, 2017). There was an article in Business standards, dated 21 May 2018 on the growth of HR analytics. It highlighted the adoption of HR analytics by Information technology (IT) firms, professional services, financial services, and insurance companies (2018). From its study, it states that from the past five years there is a 70 percent increase in analytic professionals in India

A study by the Massachusetts Institute of Technology (MIT) explains "top-performing organizations use analytics five times more than the low performing organizations". A systematic review was analyzed of 25 articles from 2010-2020 and identified that there is a shift from traditional HR practices to evidence-based decision making with systematic use of tools like HR analytics and organizations hopes for best results with better ROI (Bersin, 2016). Ben has classified three periods on growth and development of HR analytics in his paper 'An ROI-based review of HR analytics: practical implementation tools' first is incubation period, incremental growth, and substantial growth, which explains the growth and importance of analytics (Ben-Gal, 2019). Earlier HR analytics was people and process perspective by using technical aspects, but recent studies show that HR analytics is practiced in managerial and strategic perspective (Ben-Gal, 2019).

From the above literature review, it was observed four trends in exploring HR analytics. First, HR analytics by way of a strategic management tool that produces high ROI to the organization on continuous improvement, talent management, performance management, employee engagement, and others. The key challenge with this trend is answering the factors involved in specific strategic measures (Ben-Gal, 2019) (Marler, 2017), like cost reduction, handling critical talent issues, and others. Figure1 (Clarke, 2017) explains HR operational and strategic level concerns and their impact on the business outcome. Second, evidence-based approach that yields high ROI on predicting individual and organizational performance with relevant data on using suitable tools (Ben-Gal, 2019). The key challenge here is on choosing a suitable tool to predict the future. Many firms lag in adopting suitable methodological and technological tools. The third movement in HR analytics study is an effective decision-making tool and ROI connected by providing efficient decisions (Fitz-Enz, 2014). The key challenge is on collecting and analyzing data to prove decisions effectively and efficiently (Ben-Gal, 2019). And forth one, several research articles on the future of HR analytics highlighted challenges of implementing HR analytics, i.e. many researchers discussed that should HR be an 'HR function' or the role of HR professionals (Huselid, 2015).

**Figure 1: HR analytics functions impact on the operational and strategic basis**

HR analytics functional impact	Operational	Strategic
HR Functional concerns	Dashboards Transactional HR, HR process improvement	Talent life cycle, Reward, Performance management Employee experience
Business Concerns	Workforce driven operational effectiveness Operational workforce planning	Cost reduction, M&A, restructuring, strategic workforce planning, critical talent issues

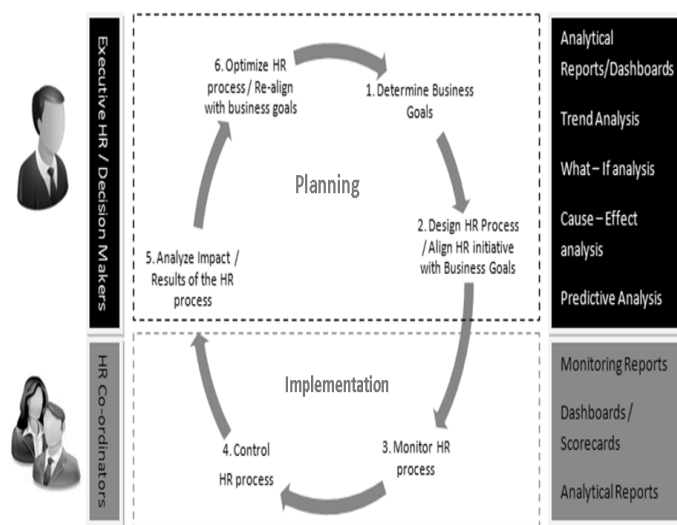
Source: (Clarke, 2017)

HR Analytics is a methodology that provides insights on Investment in human capital assets that contribute to an organization's success. EIU research found that already 31 percent of organizations plan to invest in data analytics and around 55 percent of respondents believe in metrics that define success in the current HR scenario that will change in future years as said in KPMG study 2012. To understand the difference between metrics and analytics, metrics describe measures of past performance while analytics use those measures to gain insights or predict the future. Bersin (2016) explains most firms use HR metrics and scorecards but HR needs analytics to describe the measurement that matters which includes statistics, tools, models, use of appropriate data, analyzing the data, and applying statistical and scientific standards to evaluate results and those results which guide for the business. Most organizations are adopting HR analytics tools and methodology for better ROI and organization performance. Organizations like Accenture, Phillips, Google, and Wipro such high performing organizations adopt HR Analytics to identify high performers, control attrition and altogether perform better (Fitz-Enz, 2014).

### III. USAGE OF HR ANALYTICS

The HR analytics tool will help in providing the right data and the right tools to run the process effectively. HR initiatives are designed in such a way that it supports the organization to reach its goals. To determine the need for such initiatives, HR professionals need to understand the current state and problem caused by KPI's and also various factors affecting these KPI's. It is also essential to look at the historic data, cause-effect analysis of past decisions, and 'what if' use cases in any decisions. When HR professionals collect and gather the data in figure 2 (Helical); HR Analytics feeds the same data into sophisticated data models, tools, and algorithms to gain actionable insights. Such tools will provide insights in the form of a dashboard, visualization, and reports for the improvement of data gathering, data cleansing analysis, evaluate goals and KPI creates an action plan based on analysis and thus executes the plan.

**Figure 1 the process of HR Analytics**



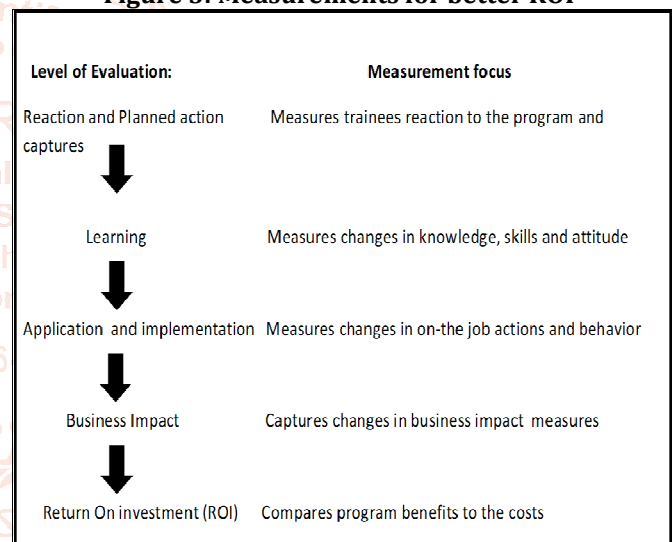
Source: (Helical) 2018

### ROI based HR analytics: An Analysis

We explore the return on investment developed by the organization on using HR analytical tools, which assists organizations in insights and for better decision making. Our need to explore ROI based approach was fulfilled by a

systematic study on investment returns from various literature reviews. Besides studying the growth of HR analytics and its impact, it was also found that there was précised scientific evidence to help HR professionals or decision-makers to know effectiveness and efficiency and impact on ROI (Rasmussen, 2015). Our intention to study had two ideas firstly, impact on ROI by use of HR analytics and secondly, to explore standardized ROI framework developed for HR programs in figure 3. John (2017) in their study introduced "LAMP framework" which stands for (a) logic - connecting logical measures and relevant business outcomes, (b) analytics - analyzing relationships between data, measures, and outcome (c) measures - identifying and ensuring high-quality data, and (d) process - it's a process of incorporating the insights from rigorous analytics into business decision making (John Boudreau, 2017). The concept of 'LAMP' on ROI suggests that allocating monetary resources for HR programs should consider firstly, the inflow of returns generated by that allocation. Secondly, the balancing outflows of resources should make an obligatory investment. Thirdly, to measure inflow and outflows in the future period. These factors produce and direct for better ROI and its logical framework guides investment decisions (John Boudreau, 2017) refer to figure 3.

**Figure 3: Measurements for better ROI**



Source: Authors

Organizations have identified the need and trend on measurement and evaluation to examine the progress of return on investment (Phillips, 2012). To measure the HR effectiveness and its impact on ROI, specific HR measures are recorded like turnover costs, employee retention rates, and others. Sometimes investments in HR programs for employee productivity keep watching for their investment returns. They often provide intangible results like employee morale or employee satisfaction, which does not provide measurable revenue nor shows the percentage increase in productivity. Therefore calculating the return on investment delivers HR professionals to provide tangible results and their strategic contribution to the organization. Donald Kirkpatrick in 1959 published an idea on training evaluation. Authors have used the above framework to evaluate a training program and its impact on ROI (Angrave D. C., 2016): For example, the main idea of ROI is to measure the impact of training investment on organizational performance i.e. bottom line (Charlton, 2005).



For example, HR professionals need to analyze training effectiveness based on a few questions:

Reaction and planned action: Data represents a reaction to the program and planned action by trainees

Whether participants were satisfied?

Did the training fulfill the needs requirements?

Can you apply training skills in future work?

Learning: Guides and participants' knowledge and skill acquired,

Did trainees gain knowledge and skill?

What skills have been upgraded from the training sessions?

Application and implementation: How Trainees apply their gained knowledge and skill from the training programs

Did the training impact work activities?

Can trainees share knowledge gained from the training program?

Business Impact: Measures the effect of the application of knowledge and skill by trainees for a better impact on business. The Measure includes job contribution, success rate, absenteeism, job engagement, and others.

Did the training impact business goals?

What changes happened in business on employee training?

Return on Investment (ROI): at this step, comparing program benefits to the costs,

Did the investment succeed?

Did the training investment provide a positive return on investment?

#### HR Analytics value:

HR analytics is transforming from operational access to the strategic center of excellence, companies are creating more and more data relevant for the present and future use and focusing more on people. HR analytics through align from intangible theory based decisions to the actual ROI by practicing task automation, improved employee work experience, decreased retention, better hiring practice, improved workforce planning, identifying attrition and its causes, identifying best-performing talent, to improve HR performance, predict in-demand skills and positions which are needed to improve business performance and very important it transforms the role of HR into a strategic partner. The use of data analytics helps in making decisions based on facts and it allows the HR Team to find actionable insights and focus on people and departmental programs to drive better results. Analytics will also determine employee wants and needs, by creating a better social and work environment and increasing employee retention, which in turn improves company culture. Analytics creates data transparency, by which it benefits employees to view their performance data and fill the skill gaps,

To explain in detail with an example, the benefits of HR analytics in recruitment is algorithms on jobseekers data allows HR professionals to identify the best matching talent for vacant positions, for improving quality of hire. Similarly, recruiters can identify a pattern of high and low-performing employees from their employee data which can lead to modifying employee hiring and retention strategy. HR

analytics helps in identifying the activities that have maximum impact on employee engagement and reasons causing attrition which leads to making better decisions.

#### Case studies:

In 2011 **Hewlett Packard** applied HR data analytics to predict employee turnover, they observed that employees who were paid high and promoted and better performance ratings were negatively correlated with someone who received a promotion but did not receive a pay rise is likely to leave a job. It's called "Flight Risk Score". The company was losing its talent, therefore considering five years of people data, and with a hypothesis, they identified that most of the factors were highly correlated with attrition. The reason was found that employers with a job change, responsibility due to promotion or lateral movement which resulted in more attrition (Soundararajan, 2016).

**Cisco** case study on predicting and preventing employee attrition with HR analytics: To maintain its competitive advantage, the company needs to retain its highly skilled employees, therefore HR analysts have to understand how these employees think and feel for the company. Cisco wanted to understand the satisfaction level of engineers on different styles of leadership and the reason for employees to leave the organization and finding better ways to retain them. Cisco's HR team has used advanced HR analytics to assess employee satisfaction, causes for attrition, and develop retention models. The company managers say a promotion or providing a high salary is not always the idea for retention, sometimes giving more holidays, flexible working hours boosts employee's job satisfaction. Like these were the predictions from the collected data (Jackson, 2009)

#### IV. CONCLUSION

Many industry experts have predicted that HR Analytics will be used by many organizations in the coming years. Organizations have to adopt new practices to survive in the business field; due to change in globalization, competition, availability of technology, and information. It has been observed that industries must possess predictive analytics, if not then it is challenging to survive in the long run. In the competitive era of HR professionals, they need to generate and have greater analytical knowledge and abilities. This will make better HR professionals when they generate new insights, better communication with leaders, make better decisions. During the literature study, it was observed that most of the studies explain that there is an increase in organizations implementing new data analytics tools. For the successful implementations of HR analytics, academicians can help to minimize previously discussed problems through the application of HR analytics programs successfully. The role of HR analytics focuses on both the operation of HR functions and the strategic tasks of the organization. The HR team can take advantage of HR analytics as a value-adding to the department in an organization. In ROI based review study it was observed that there is a need for greater scientific empirical research in the field of HR analytics and organizations have to focus on ROI based approach for better performance. To sum up, HR analytics can be used for individual and organizational performance but not prove the HR worth.

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